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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,183	02/13/2003	Takehiko Kitamori	2002-0252A	7634

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EXAMINER	
FINEMAN, LEE A	

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/069,183	KITAMORI ET AL.	
	Examiner	Art Unit	
	Lee Fineman	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/22/02 & 3/8/05* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31 October 2005 has been entered in which claims 7-13 were cancelled and claims 14-17 were added. Claims 14-17 are pending

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 14-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification fails to specifically identify "the modulated excitation light as non-parallel light-ray beams." The section of the specification listed by the applicant in the remarks as detailing this feature only refers to the beam being emitted as plane waves. Further fig. 1 only shows a collimated beam leaving the beam expander. As such, the examiner contends, absent specific support in the specification, that this subject matter was not considered within the metes

and bounds of the invention as originally filed. The dependent claims inherit the deficiencies of the claim from which they depend.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 14, the limitation "a beam expander that enables **collimation** adjustment in a direction of a light path of the excitation light and biaxial centering in a direction perpendicular to the excitation light path and which is positioned to emit the excitation light **as non-parallel light-ray beams** when the excitation light is emitted from said excitation light source" is unclear. It is not understood how the light beams are both collimated and non-parallel as the same time. The dependent claims inherit the deficiencies of the claim from which they depend. For the purposes of examination, the light beam will be considered collimated and not non-parallel.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opsal, US 5,074,669 in view of Hiraga et al., WO99/08149, Eguchi et al., US 5,402,407, and Power, US 5,365,065 or Prekel et al. US 5,760,400.

Regarding claim 14, Opsal discloses in fig. 1 a desktop thermal lens microscope apparatus, comprising a laser (20) forming an excitation light source operable to emit excitation light; a chopper (24) positioned to modulate the excitation light when emitted from said excitation light source (fig.1); a beam expander (26) that enables collimation adjustment in a direction of a light path of the excitation light (fig. 1); another laser (60) forming a probe light source operable to emit probe light; a collimator lens (in 64) positioned to emit the probe light as parallel light-ray beams when the probe light is emitted from said probe light source (fig. 1); a microscope optical system (36, 40, 50, 52, 54) operable to receive the modulated excitation light as a non-parallel light-ray beam (from 40, in so far as when the light is focused on the specimen it is a non-parallel light-ray beam) and the probe light as a parallel light beam (from 64), said microscope optical system comprising an objective lens system (40) and having a stage (50, 52, 54) for receiving a specimen (42) thereon, wherein the modulated excitation light and the probe light can be passed through said objective lens system and into said stage such that a thermal lens is formed by irradiation of the excitation light into the specimen on said stage (fig. 1 and column 5, lines 19-21), wherein the probe light can be passed through the thermal lens (fig. 1) so as to be focused on an optical axis of the modulated excitation light around the thermal lens (at 42, fig. 1) and diffused by the thermal lens (for detection, see column 5, lines 13-32); and a light receiving system (66, 84, 80) positioned to receive the modulated excitation light and the probe light that has passed through the thermal lens (fig. 1). Opsal discloses the claimed invention except for the

lasers being semiconductor lasers; and a single housing, wherein said excitation light source, said probe light source, said chopper, said beam expander, said collimator lens, said microscope optical system and said light receiving system are integrated together in said single housing. Opsal is also silent to said beam expander enabling biaxial centering in a direction perpendicular to the excitation light path. Hiraga et al. teach a thermal lens microscope system (fig. 1) which includes a probe laser (2) and an excitation laser (1) and further teach that gas lasers, solid-state lasers, dye lasers and semiconductor lasers are art-recognized equivalents for providing a light source (page 25, lines 11-24, see English Translation in US 6452710, column 17, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any of the above lasers including semiconductor lasers as claimed in the system of Opsal as reliable, commonly available light source for the system. Secondly, thermal lens systems that are integrated into a single housing, i.e. connected together by means of a structure, are very well known in the art for providing a more stable system which prevents accidental misalignment of the elements. For example, Power or Prekel et al. both teach thermal lens systems that integrate light sources choppers, beam expanders, lenses and light receiving systems (fig. 1, Power and fig. 2, Prekel). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate all the elements of Opsal in view of Hiraga et al. as set forth above to provide a more stable system which prevents accidental misalignment of the elements. Finally, Eguchi et al. teach an optical system (see figs. 2 and 5) which include a beam expander that enables biaxial centering (column 6, lines 63-66, via x-axis and z-axis adjustment) in a direction perpendicular to the excitation light path (fig. 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to the beam expander of Opsal have

biaxial centering as suggested by Eguchi et al. to provide for easy adjustment of the beam without further complicating the structure (Eguchi, column 2, lines 44-46). In as much as the claims are able to be understood in light of the 35 U.S.C 112 rejection regarding non-parallel light made above, the rejection applies.

Regarding claim 16, Opsal further discloses a method for performing a chemical analysis, comprising performing a chemical analysis (column 7, lines 23-44) of a very small quantity in a micro spatial region on a chip (42).

7. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opsal in view of Hiraga et al., Eguchi et al., and Power or Prekel et al., as applied to claims 14 and 16 above, and further in view of Morris et al., US 4,591,272.

Opsal in view of Hiraga et al., Eguchi et al., and Power or Prekel et al., as applied to claims 14 and 16 above disclose the claimed invention except for explicitly stating that said chopper is operable to perform lock-in amplifier signal processing with a modulation mechanism that performs phase-locked loop (PLL) control of the drive of the chopper and thereby performs modulation of the excitation light. Morris et al. teach disclose a desktop thermal lens microscope apparatus (fig. 1) including a chopper (24) that is operable to perform lock-in amplifier signal processing with a modulation mechanism (not shown) that performs PLL control of the drive of the chopper and thereby performs modulation of the excitation light (column 4, lines 18-25 and lines 49-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the chopper of Opsal in view of Hiraga et al., Eguchi et al., and

Power or Prekel et al. perform lock-in amplifier signal processing and PLL control as suggested by Morris et al. to provide more effective modulation control.

Response to Arguments

8. Applicant's arguments with respect to claims 14-17 have been considered but are moot in view of the new ground(s) of rejection.

9. Applicant's arguments filed 31 October 2005 have been fully considered but they are not persuasive.

Applicant argues in the remarks (page 6, paragraph 1) that "Opsal clearly does not disclose or suggest the claimed high precision desktop thermal lens microscope apparatus" because the thermal effect/lens is different than the instant invention. The examiner respectfully disagrees. The claims provide no specific detail of the thermal lens that distinguishes the thermal lens microscope of Opsal for that of the instant invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LAF
January 20, 2006

MARK A. ROBINSON
PRIMARY EXAMINER